PN - JP63033568 A 19880213

IC - C23C16/04 ; C23C16/08 ; C23C16/46 ; H01L21/285 ; H01L21/88

FI - H01L21/285&C ; C23C16/04 ; C23C16/08 ; C23C16/46 ; H01L21/88&K

FT - 4K030/AA03 ;4K030/AA04 ;4K030/AA14 ;4K030/AA16 ;4K030/AA17 ; 4K030/AA18 ;4K030/BA01 ; 4K030/BA02 ; 4K030/BA06 ; 4K030/BA12 ; 4K030/BA14 ; 4K030/BA17 ; 4K030/BA18 ; 4K030/BA20 ; 4K030/BA29 ; 4K030/BA35 ; 4K030/BA38 ; 4K030/BA39 ; 4K030/BA40 ; 4K030/BA42 ; 4K030/BA43 ; 4K030/BA44 ; 4K030/BA48 ; 4K030/BB13 ; 4K030/BB14
- 4M104/AA01 ;4M104/AA09 ;4M104/BB02 ; 4M104/BB05 ; 4M104/BB06 ; 4M104/BB07 ; 4M104/BB09 ; 4M104/BB13 ; 4M104/BB14 ; 4M104/BB16 ; 4M104/BB17 ; 4M104/BB18 ; 4M104/BB22 ; 4M104/BB25 ; 4M104/BB26 ; 4M104/BB27 ; 4M104/BB28 ; 4M104/DD44 ; 4M104/DD45 ; 4M104/DD47 ; 4M104/DD48 ; 4M104/DD80 ; 4M104/FF21 ; 4M104/FF22 ; 4M104/HH04
- 5F033/AA02 ;5F033/AA08 ;5F033/AA64 ;5F033/BA12 ; 5F033/BA16 ; 5F033/BA25 ; 5F033/DA05 ; 5F033/DA13 ; 5F033/DA15 ; 5F033/DA16 ; 5F033/EA24 ; 5F033/EA25 ; 5F033/EA27 ; 5F033/EA28 ; 5F033/GG04 ; 5F033/JJ07 ; 5F033/JJ08 ; 5F033/JJ13 ; 5F033/JJ18 ; 5F033/JJ19 ; 5F033/JJ20 ; 5F033/JJ21 ; 5F033/JJ27 ; 5F033/JJ28 ; 5F033/JJ29 ; 5F033/JJ30 ; 5F033/JJ33 ; 5F033/KK01 ; 5F033/KK06 ; 5F033/KK09 ; 5F033/NN03 ; 5F033/PP04 ; 5F033/PP08 ; 5F033/PP10 ; 5F033/PP33 ; 5F033/QQ58 ; 5F033/QQ65 ; 5F033/QQ73 ; 5F033/QQ82 ; 5F033/QQ92

TI - CVD DEVICE

PA - ULVAC CORP

IN - NAKAYAMA IZUMI;SUZUKI AKITOSHI; NAWA HIROYUKI;KANEKO TOMOHIKO; KUSUMOTO TOSHIO; TAKAKUWA KAZUO;IKUTA TETSUYA

CT - JP63028868 A [ ]; JP63026366 A [ ]; JP63026367 A [ ]

AP - JP19860176228 19860726

PR - JP19860176228 19860726

DT - I

PD - 1988-02-13

OPD - 1986-07-26

NPR - 1



AN - 1988-030643 [05]

TI - CVD appts. esp. for depositing metallic films - includes external light source for heating the substrate pref. in a differential manner

AB - EP-255454 CVD appts. comprises a vacuum chamber, a reactive gas feed; and a light source for heating the substrate in the chamber. Pref. the substrate has an insulating portion and a metallic portion, such that the light source produces a temp. differential in the substrate surface and the reaction gas, comprising a metal source and a reducer, deposits a metal film on the

metallic portion only.

- Appts. includes an IR light source (8) for heating the substrate (3); and nozzles (4) for feeding a transverse reactant gas flow which is maintained as a laminar flow over the substrate by a second perpendicular gas flow from manifold (6). The metal deposited on the metallic substrate portions may be the same or different as the substrate metal. Reducing gas is H2 and metal source gas is a halide e.g. WF6, MoF6, TaF5, CrF4, TiF4, TiCl4, MoCl5, WCl6, AlCl3, etc.
- USE/ADVANTAGE - Esp. in depositing wiring layers, through-hole metallisation, barrier metal etc. in VLSI processing. Appts. facilitates close process control and reproducibility.(6/21)

IW - CVD APPARATUS DEPOSIT METALLIC FILM EXTERNAL LIGHT SOURCE HEAT SUBSTRATE PREFER DIFFERENTIAL MANNER

AW - CHEMICAL VAPOUR DEPOSIT

PN - EP0255454 A 19880203 DW198805 Eng 017pp
- JP63033567 A 19880213 DW198812 000pp
- JP63033568 A 19880213 DW198812 000pp
- US4924807 A 19900515 DW199024 000pp
- US5244501 A 19930914 DW199338 C23C16/00 014pp

IC - C23C16/44 ;H01L21/20

MC - L04-C10E L04-D01 M13-E07
- U11-C05C3 U11-C05C5 U11-C09B

DC - L03 M13 U11

PA - (ULVA ) NIHON SHINKU GIJUTSU KK

IN - IKUTA T; KANEKO M; KUSUMOTO Y; NAKAYAMA I; NAWA H; SUZUKI A; TAKAKUWA K

USAB - US4924807 A CVD appts. comprises a reduced pressure reaction chamber with means to support at least one substrate, a means to feed a gas contg. a metal element and a reducing gas parallel to the substrate surface, a means to feed an inert gas opposed to the substrate surface to put the 1st gas flow into a laminar flow state in the vicinity of the substrate, and a light beam to heat the substrate, causing a temp. difference between an electrical insulating film and a 1st metal film due to differential absorption, to produce a chemical reaction to form a thin film contg. the component of the 1st gas. The reaction only occurs on the surface of the 1st metal film. Pref. the reducing gas is H2 and the metal is selected from WF6, MoF6, TaF5, CrF4, TiF4, TiCl4, MoCl5, and AlCl3. The insulating film is one or more of SiO2, Al203, BSG, PSG, BPSG, BN, SiNx or SiNxOy.The metal film is one or more of W, Mo, Ta, Cr, Ti, Al, Pt, Pd, An, and Ni. The substrate is Si, SiO2, Al203, glass or sapphire. ADVANTAGE - The laminar flow state can be maintained with good controllability. The inert gas flow suppresses blow-up of the metal-contg. gas and reducing gas, preventing diffusion by turbulence. Thus, encroachment and formation of voids is reduced, allowing reproducible metal films to be formed. The chamber wall and transparent window are prevented from contamination.
- (14pp)

AP - EP19870420201 19870724;JP19860176227 19860726;JP19860176228 19860726;US19870077621 19870724; [Div ex] US19870077621 19870724; [Cont of] US19890396148 19890821;US19910733373 19910722

PR - JP19860176228 19860726;JP19860176227 19860726



PN - JP63033568 A 19880213

TI - CVD DEVICE

AB - PURPOSE:To inhibit the growth of an enclosement and a cavity and to form a metallic thin film on a base plate at high speed by irradiating the base plate with a heating lamp while making a first sheet-like gas flow to the state of a laminar flow by means of a second gas flow at the vicinity of the base plate.

- CONSTITUTION:A base plate 3 put on a freely rotatable holder 2 for the base plate is arranged to the inside of a reaction tank 1 which is vacuumed and exhausted through an exhaust part 7 to evacuated it. Reactive gas consisting of gaseous reductive H2 and gaseous WF6 contg. metallic elements is allowed to flow in a sheet-shape nearly parallel to the surface of the above-mentioned base plate 3 through slit-shaped gas introduction parts 4a, 4b provided on the side part 1a of the above-mentioned reaction tank 1. Furthermore inert gas such as Ar is introduced opposite to the surface of the base plate 3 through a perforated gas jet part 6a via a gas introduction part 6 formed between a translucent window 5 provided to a top part 1b and the gas jet part 6a. Flow R, R' of reactive gas are made to a state of a laminar flow at the vicinity of the base plate 3 by means of the flow Q of inert gas. In this state, the base plate 3 is irradiated through the translucent window 5 and the gas jet part 6a with an infrared lamp 8 and a thin film of W or the like is formed from the reactive gas by means of light and heat energy.

I - C23C16/04 ;C23C16/08 ;C23C16/46 ;H01L21/285 ;H01L21/88

PA - ULVAC CORP

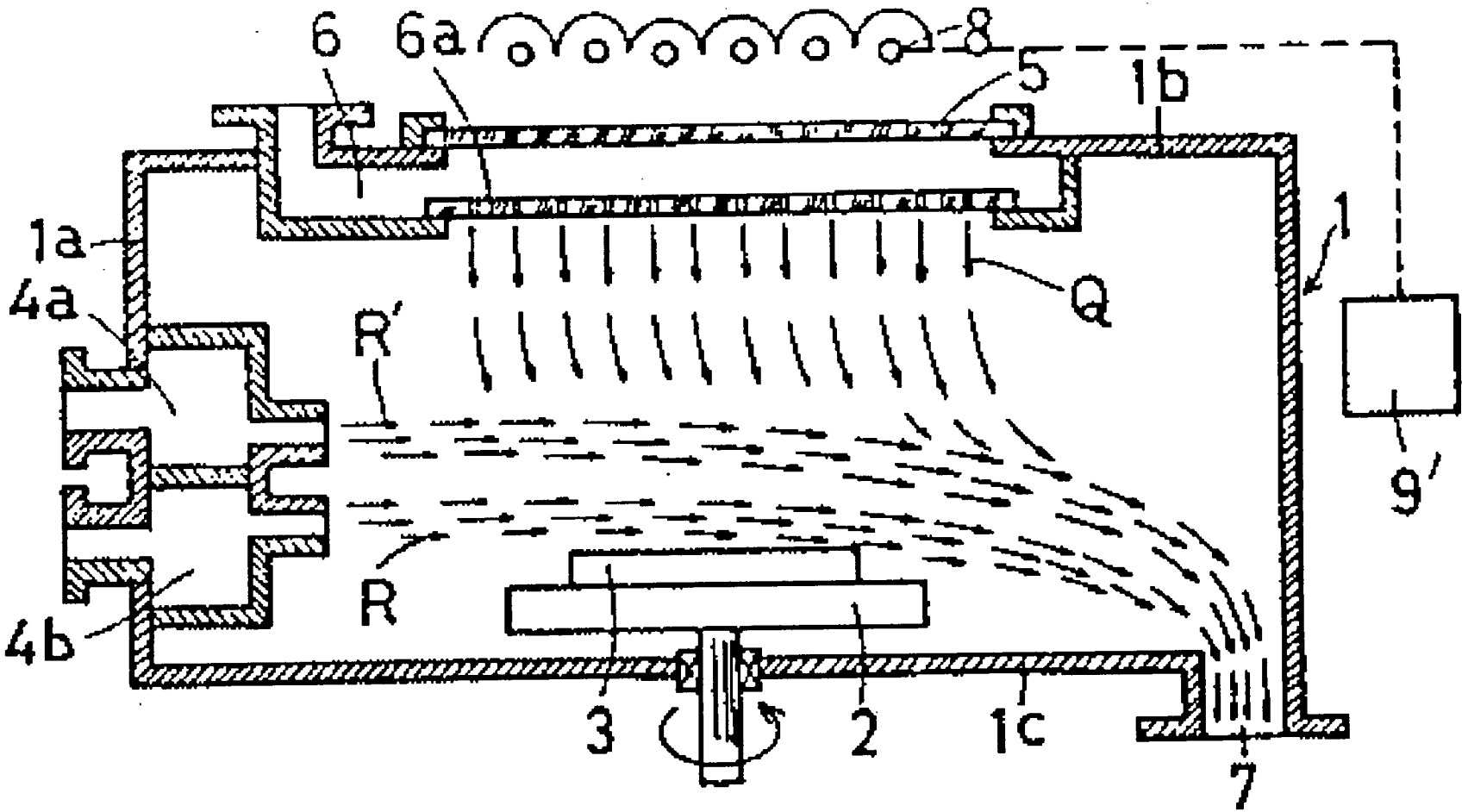
IN - NAKAYAMA IZUMI; others: 06

ABD - 19880708

ABV - 012242

GR - C510

AP - JP19860176228 19860726


6
6a
8
5
1b
1a
1
4a
Q
R'
9
R
4b
3
2
1c
7